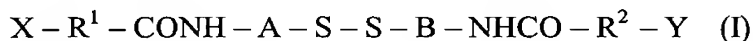


**Claims:**

1. A photographic developer composition for use in the development of a black and white silver halide photographic element said composition comprising at least one developing agent and, in an amount sufficient to inhibit sludge deposition, one or more compounds selected from compounds having the formula



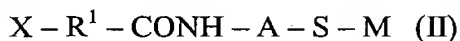
wherein

A and B are each independently a substituted or unsubstituted aliphatic, alicyclic, aromatic or heterocyclic group;

$R^1$  and  $R^2$  are each independently a substituted or unsubstituted aliphatic, alicyclic, aromatic or heterocyclic group;

X and Y are each independently a solubilising group;

and compounds having the formula



wherein A,  $R^1$  and X are as defined above, and

M is either a hydrogen atom or a cationic species if the sulfur atom is in its ionised form.

2. A composition according to claim 1 wherein A and B are selected from a substituted or unsubstituted alkylene group having from 1 to 12 carbon atoms, a cycloalkylene group having from 5 to 8 ring carbon atoms, an aromatic group having from 5 to 10 ring carbon atoms, a heterocyclic group having from 5 to 10 ring atoms, said ring atoms being selected from selected from C, N, S, and O.

3. A composition according to claim 1 wherein A and B are phenylene groups.

4. A composition according to claim 1 wherein  $R^1$  and  $R^2$  are selected from a substituted or unsubstituted alkylene group having from 1 to 12 carbon atoms, a cycloalkylene group having from 5 to 8 ring carbon atoms, an aromatic group having from 5 to 10 ring carbon atoms, a heterocyclic group having from 5 to 10 ring atoms, said ring atoms being selected from selected from C, N, S, and O.

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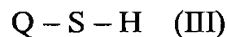
5. A composition according to claim 1 wherein  $R^1$  and  $R^2$  represent  $-(CH_2)_3-$ .

6. A composition according to claim 1 wherein the X and Y groups are selected from quaternary ammonium groups and carboxylic, sulfonic, sulfinic and phosphonic groups in acid or salt form.

7. A composition according to claim 1 wherein A and B each represent paraphenylene,  $R^1$  and  $R^2$  each represent  $-(CH_2)_3-$  and, X and Y each represent  $-COOM$  wherein M is either a hydrogen atom or a cationic species if the carboxyl group is in its ionised form.

8. A composition according to claim 1 wherein compound (I) and/or (II) is present in the developer composition in an amount sufficient to provide a concentration of from  $7 \times 10^{-6}$  to  $7 \times 10^{-3}$  mol/l of working strength developing solution.

9. A composition according to claim 1 further comprising a compound having the formula



wherein Q represents a substituted or unsubstituted heterocyclic group, the silver salt of said compound being water insoluble

10. A composition according to claim 9 wherein the heterocyclic group has from 5 to 10 ring atoms selected from C, N, S, and O.

11. A composition according to claim 9 wherein the heterocyclic group is benzothiazole group.

12. A composition according to claim 9 wherein the compound of formula (III) is present in the developer composition in an amount sufficient to provide a

concentration of from  $2 \times 10^{-5}$  to  $5 \times 10^{-3}$  mol/l of working strength developing solution.

13. A composition according to claim 1 further comprising a thiol promoting compound selected from sugar derivatives, mercaptocarboxylic acids and compounds selected from those having formula (III) above whose silver salts may be water insoluble or water soluble.

14. A composition according to claim 13 wherein the compound is selected from ascorbates, isoascorbates, erythorbates, piperidine hexose reductone, mercaptosuccinic acid, cysteine and 5-mercaptopentotriazole.

15. A composition according to claim 13 wherein the sugar derivative is present in the developer composition in an amount sufficient to provide a concentration of from  $2 \times 10^{-4}$  to  $7 \times 10^{-2}$  mol/l of working strength developing solution.

16. A composition according to claim 13 wherein the mercaptocarboxylic acid or compound selected from those having formula (III) is present in the developer composition in an amount sufficient to provide a concentration of from  $2 \times 10^{-5}$  to  $2 \times 10^{-2}$  mol/l of working strength developing solution.

17. A composition according to claim 1 wherein the developing agent is selected from dihydroxybenzene and ascorbic acid developing agents.

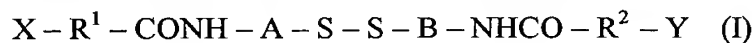
18. A composition according to claim 17 further comprising an auxiliary super-additive developing agent.

19. A composition according to claim 1 comprising a sulfite preservative.

20. A method of forming a photographic image in a black and white silver halide photographic element which comprises imagewise exposing the

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photographic element and developing the exposed element with a developer solution which is or is produced from a composition comprising at least one developing agent and, in an amount sufficient to inhibit sludge deposition, one or more compounds selected from compounds having the formula



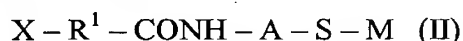
wherein

A and B are each independently a substituted or unsubstituted aliphatic, alicyclic, aromatic or heterocyclic group;

$R^1$  and  $R^2$  are each independently a substituted or unsubstituted aliphatic, alicyclic, aromatic or heterocyclic group;

X and Y are each independently a solubilising group;

and compounds having the formula

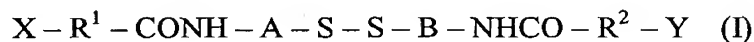


wherein A,  $R^1$  and X are as defined above, and

M is either a hydrogen atom or a cationic species if the sulfur atom is in its ionised form.

21. A method as claimed in claim 20 wherein one or more of the compounds (I) and (II) defined above are added to the developer solution from the photographic element during development.

22. A black and white silver halide photographic element comprising a support having thereon at least one light-sensitive silver halide emulsion layer said element comprising, in an amount sufficient to inhibit sludge deposition during development, one or more compounds selected from compounds having the formula

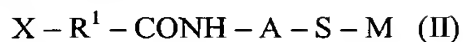


wherein

A and B are each independently a substituted or unsubstituted aliphatic, alicyclic, aromatic or heterocyclic group;

$R^1$  and  $R^2$  are each independently a substituted or unsubstituted aliphatic, alicyclic, aromatic or heterocyclic group;

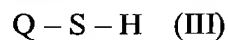
X and Y are each independently a solubilising group;  
and compounds having the formula



wherein A, R<sup>1</sup> and X are as defined above, and

M is either a hydrogen atom or a cationic species if the sulfur atom is in its ionised form.

23. A photographic element as claimed in claim 22 further comprising one or more compounds selected from a compound having the formula



wherein Q represents a substituted or unsubstituted heterocyclic group, the silver salt of said compound being water insoluble and a thiol promoting compound selected from sugar derivatives, mercaptocarboxylic acids and compounds selected from those having formula (III) above whose silver salts may be water insoluble or water soluble.

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